

Appendix A: Hardware Component List

APC Uninterruptible Power Supply

The APC Smart-UPS is a rack mountable unit with an output power of 3,000 VA and 2,250 W, and an input and output voltage of 208 V (North America) or 230 V (Latin America, Asia). It has an input frequency of 50/60 Hz +/- 5 Hz (North America) or +/- 3 Hz (Latin America, Asia) (auto sensing). It supports an input connection type of NEMA L6-20P (North America) or IEC-320 C20 (Latin America and Asia), and an output connection type of (2) NEMA L6-20R or (1) NEMA L6-30R (North America), or (3) IEC Jumpers or (1) IEC 320 C19 (Latin America and Asia). General features include:

- Hot Swap Batteries
- Intelligent Battery Management
- Overload Indicator
- Replace Battery Indicator
- SmartSlot Software
- Automatic Voltage Regulation (AVR)
- User replaceable batteries

The UPS is configured with a DB-9 RS-232 Smart-Slot card to support remote management.

Benchmark DLT7 Autoloader

The Benchmark DLT7 is a seven cartridge 280 GB native capacity (560 GB compressed) tape jukebox with a single drive performance of 3 MB/sec native transfer rate (6 MB/sec compressed), providing enterprise reliability and performance. It's system parameters include:

Storage Capacity	280 GB native, 560 GB compressed
Data Transfer Rate	10.8 GB/hour native, 21.6 GB/hour compressed
System Interface	WIDE ULTRA SCSI, Low Voltage Differential (LVD)
Unit Controls	4 button menu interface keypad

It can backup over 20 GB of data every hour, and one tape can support one week's worth of data.

The DLT7 is connected to a Tatung workstation, which runs the backup server that conducts scheduled backups of software images and subscriber data.

Black Box 40871 Terminal Server (Console Server)

This Console Server is an AC powered, 8-port, RJ-45, rack mounted unit. It is configured with 1 MB DRAM and 512 KB Flash memory with an 80C186 25 MHz processor. It supports a 10 Mbps Ethernet LAN connection and a 115.2 kbps serial connection. Protocols supported include TCP/IP, Telnet, Rlogin, Raw, Reverse Telnet, PPP, SLIP, CSLIP, LPD, RCP, DNS, and WINS. It supports the serial port signals CTS, RTS, DSR, DTR, DCD, RxD, and TxD. Each port can be configured to require password authentication for access.

The Console Server is used to configure and manage the ensoBox™ components. Each node is configured with a Console Server, and each component connects to the Console Server via its RJ-45 console port. To access each component via the Console Server a telnet session is established to the Console Server and its corresponding port (10001 to 10008).

Cisco AS5300 Remote Access Server

The Cisco AS5300 Remote Access Server (RAS) is capable of terminating analog calls and ISDN calls as it is configured in the ensoBox™. It is configured with 128 MB DRAM, 16 MB Packet DRAM, 16 MB Flash, and has a 150 MHz R4700 processor.

It is configured with an auto-sensing RJ-45 10 Base-T/100 Base-TX Fast Ethernet port and an RJ-45 10 Base-T Ethernet port.

Each AS5300 can support up to eight (8) T1s or E1s.

Cisco Catalyst 2924 XL 10/100 Autosensing Fast Ethernet Switch

The Cisco Catalyst 2924 XL contains 24 auto-sensing RJ-45 10 Base-T/100 Base-TX Fast Ethernet ports. For management purposes there is one (1) RJ-45 console port and one (1) RJ-45 auxillary port.

The Catalyst 2924 is a subscriber of the Catalyst 2900 switch family, which are all auto-sensing Fast Ethernet switches. The switches can be configured to support multiple VLANs, as is the case with the ensoBox™.

Cisco CE-505 Cache Engine

5 The CE-505 is a cache appliance with a 266 MHz processor, 128 MB SDRAM, 8 MB Flash, 256 KB EPROM, 512 KB L2 cache, a 9-GB Ultra II SCSI LVD disk drive, and two (2) auto-sensing RJ-45 10 Base-T/100 Base-TX Fast Ethernet ports. For management purposes there is one (1) RJ-45 console port and one RJ-45 (1) auxillary port. The CE-505 is capable of supporting up to 500 concurrent TCP sessions.

Cisco CS-50 Content Smart Switch (Load Balancer)

10 The Cisco (formerly ArrowPoint) CS-50 Content Smart Switch is an intelligent load balancer that uses specially designed algorithms to balance URL requests amongst a server farm. The CS-50 Content Policy Engine consists of a high-speed superscalar RISC processor, 128 MB of memory, and 5 Gigabits per second (Gbps) of throughput, and delivers per-flow prioritization based on hundreds of user-defined policies. Distributed Flow Forwarding Engines feature per-port programmable network processors for wire-speed delivery of Web content.

15 The benefits of using the CS-50 include:

Provides high-speed Web content delivery by selecting the best site and server based on full URL, cookie, and resource availability information.

20 Offers site-level security with wire-speed denial-of-service (DoS) prevention.

Provides eight (8) full-duplex RJ-45 10 Base-T/100 Base-TX Fast Ethernet ports.

Supports all TCP- and UDP-based Web protocols, wire-speed NAT, and integrated IP routing.

Optimizes both content requests and delivery for HTTP, passive FTP, and streaming media protocols.

Cisco 2621 Router

30 The Cisco 2621 router is an AC powered modular router configured with two (2) auto-sensing RJ-45 10 Base-T/100 Base-TX Fast Ethernet ports, one WIC module that contains two (2) serial WAN ports, each supporting data rates up to 2.048 Mbps, and a 4-port Ethernet Network Module (NM) with four (4) RJ-45 10 Base-T Ethernet ports. For management purposes there is one RJ-45 (1) console port and one RJ-45 (1) auxillary port. The router is configured with 16 MB Flash memory (1 SIMM), 48 MB DRAM (two 24 MB DIMMs), and the central processor is a Motorola MPC860 50 MHz.

35 Access Control Lists (ACLs) are configured on the router to control access to various ensoBox™ resources. ACLs control data flow both in to and out of each of the router ports.